[1] providing an electrically actuated valve connected to a water supply line, the valve responsive to electrical valve control signals to open and close, wherein the valve in an open state releases water from the water supply line into the water holding structure, and in a closed state prevents water from flowing from the water supply line into the water holding structure;

[2] providing an electronic control system responsive to a user commands through a control panel to generate the valve control signals;

[3] entering a user command through the control panel to actuate the valve;

[4] opening the valve in response to the user command;

[5] automatically closing the valve after a predetermined time has elapsed after opening the valve.

Applicants respectfully submit that Wendell and Hart do not describe or suggest the elements of Claim 20. To establish prima facie obviousness, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

For example, the Examiner asserts that Wendell teaches "entering a user command through the control panel to actuate the valve (col. 5, lines 38-41); opening the valve in response to the user command (col. 5, lines 64-67, col. 6, lines 44-53)." Applicants respectfully disagree. The identified passages of Wendell describe a system start-stop switch 151 which is operative to respectively start and stop operation of the CPU 112, not actuate a valve V5. The CPU 112 is said to be operative to open and close water valve assemblies V1 through V5 so as to control pool water flow through the pool system. Sensors, i.e. the sonic transducers 49, 50, 52, 54 are used to provide sonic measurements of the water depth in the pool 12, tank 16 and filters 18, 20, so as to automatically control water flow therein. Wendell at 6:17-25. Thus, Wendell teaches CPU control of the valves based on water depth sensor outputs, not on user commands entered through the control panel.

The Examiner admits that Wendell does not teach "automatically closing the valve after a predetermined time has elapsed after opening the valve." However, the Examiner asserts that Hart teaches this limitation, at 1:7-10.

The Examiner holds that it would have been obvious to modify Wendell with the teachings of Hart for the purpose of providing a self-closing valve having an accurate metering assembly to regulate the volume of water discharged over a predetermined period of elapsed time. Applicants respectfully disagree. Hart is directed to non-analogous subject matter, i.e. to manually operated faucets. Moreover, the rejection is the product of improper hindsight reconstruction, based on the teachings found only in applicants' specification.

Hart describes a valve which is manually actuated by the user pressing on a handle, not an electrically actuated valve responsive to electrical control signals to open and close. Thus, no provision is described for controlling the Hart valve using electric control signals provided by an electronic control system. The modification of Wendell as stated by the Examiner would be unworkable. One skilled in the spa and pool control art would have no reason to even consider use of a faucet valve as disclosed in Hart. The alleged suggestion for the combination is provided only from applicants' specification, by use of prohibited hindsight reconstruction.

Similar considerations apply to the rational for the rejection of the other independent claims.

Claim 27 is drawn to a pool controller system for controlling operation of a pool service system including a water heater, a water filter, and for providing a semi-automated water fill capacity. The system includes an electrically actuated valve connected to a water supply line, the valve responsive to electrical valve control signals to open and close. An electronic controller is responsive to manually entered user commands through a control panel to generate the valve control signals, the controller system for actuating the fill valve to the open state in response to a predetermined user fill command and for automatically closing the valve upon elapsement of a predetermined fill time interval. The system of Claim 27 is not described or suggested by Wendell in view of Hart.

Claim 54 is drawn to a method for automatically releasing water into the water holding structure, comprising:

> using an electronic pool control system, monitoring water parameters including water temperature and a water level sensor signal;

in response to a water level sensor signal indicative of a low water level in the water holding structure, generating electrical control signals to automatically open a water supply valve connected to a water supply line to release water into the water holding structure from a water supply line; and

generating electrical control signals to automatically close the water supply valve after a predetermined time interval has elapsed since opening the valve.

Wendell does not disclose, for example, the last limitation of Claim 54. Nor does Hart properly teach or suggest the method of Claim 54, since the reference is directed to manually actuated faucet valves.

Claim 55 is drawn to a method for releasing water into a water holding structure, comprising:

manually entering a water fill command through an electronic control panel connected to an electronic control system to actuate a water supply valve;

electrically opening the valve in response to the user command to release water into the water holding structure; and

automatically closing the valve in response to electrical signals from the electronic control signal after a predetermined time interval has elapsed after opening the valve.

Here again, Wendell does not teach any of the limitations of Claim 55. Hart does not provide the missing teaching, and only discloses a manually actuated faucet valve.

Claim 59 is drawn to a method for replenishing water in a water holding structure of a spa or swimming pool installation, comprising:

in response to a user identification of a low water condition in the water holding structure, electronically actuating a water supply valve connected to a water supply line to release water into the water holding structure;

automatically closing the valve after a predetermined time interval has elapsed after actuating the valve.

As with Claim 55, neither Wendell nor Hart disclose or suggest any of the limitations of Claim 59. Wendell does not actuate a water supply valve in response to a user identification of a low water condition, nor automatically close such valve after a predetermined time interval has elapsed. Hart does not supply the missing teachings for the reasons discussed above.

Claim 63 is drawn to a pool or spa service system for providing a semi-automated water fill capability to replenish water in the pool or spa, comprising:

> an electrically actuated valve connected to a water supply line, the valve responsive to electrical valve control signals to open and close, wherein the valve in an open state releases water from the water supply line into the pool or spa, and in a closed state prevents water from flowing from the water supply line into the pool or spa;
>
> an electronic controller system responsive to manually entered user commands through a control panel to generate the valve control signals, the controller system for actuating the fill valve to the open state in response to a predetermined user fill command, and for automatically closing the valve upon elapsement of a predetermined fill time interval.

Wendell does not disclose, e.g., the controller system as recited in Claim 63. Hart does not disclose an electrically actuated valve, and does not provide the missing teachings.

For the foregoing reasons, the outstanding rejection of Claims 20, 27, 54, 55 and 63 fails to establish a prima facie case of obviousness, and should be withdrawn.

Claims 21, 22, 56, 57, 60, 61, 65 and 66 stand rejected as being unpatentable over Wendell as modified by Hart as applied to Claims 20, 27, 54, 59 and 63, and further in view of Tompkins et al. ("Tompkins"). The rejection should be withdrawn on the grounds described above regarding the respective independent claims, and further because the combination does not teach or suggest the claimed invention.

The Examiner states that Wendell as modified by Hart does not teach setting the predetermined time during a program mode, storing in electronic memory a time value corresponding to a predetermined time, and the controller system being responsive to user commands manually entered through the

control panel. The Examiner asserts that Tompkins teaches the claimed features at col. 3, lines 4-7, 34-43 and fig. 5. Applicants respectfully disagree.

Tompkins describes a controller which has a real time clock device 34, and a microcomputer 10 and memory 44. There is no teaching that these elements be used to fulfill the missing claim limitations. Thus, the allegation that it would have been obvious to modify Wendell as modified by Hart with teaching of Tompkins, "for the purpose of providing a spa control system which accurately and efficiently controls the operation of the spa and is not adversely affected by the corrosive environment surrounding the spa," is unsupported by the references. The alleged purpose for the modification does not address the claimed invention.

Moreover, the faucet valve of Hart teaches against the invention of these claims, since it is not programmable. The faucet valve is mechanically actuated, and the time it stays open cannot be set during a programming mode.

Withdrawal of the rejection of Claims 21, 22, 56, 57, 60, 61, 65 and 66 is respectfully requested.

Claims 23, 58 and 62 stand rejected as being unpatentable over Wendell as modified by Hart and further in view of Sterghos et al. (5,730,861) ("Sterghos"). The rejection is respectfully traversed on the ground that a prima facie case of obviousness has not been established, and the applied references do not teach or suggest the claimed invention.

The Examiner acknowledges that Wendell as modified by Hart does not teach or suggest automatically closing the valve if the water level reaches an overfill level during the predetermined time, but alleges that Sterghos supplies the missing teaching. Applicants respectfully disagree.

Neither Wendell nor Hart teach or suggest the claimed inventions of Claims 20, 55 or 59 as discussed above. Sterghos describes a swimming pool control system which is said to be capable of monitoring pool conditions, including over full or under-full water levels. Yet there is no teaching or suggestion of the features of entering a user command through a control panel to actuate a water supply valve, opening the valve in response to the user command, automatically closing the valve after a predetermined time has elapsed, and automatically closing the valve if the water level reaches an overfill condition during the predetermined time interval.

CONCLUSION

The outstanding rejections have been addressed, and the application is in condition for allowance. Such favorable reconsideration is solicited.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

20. (Twice Amended) In a spa or swimming pool installation, including a pool water holding structure, a method for releasing water into the water holding structure, comprising:

providing [a] an electrically actuated valve connected to a water supply line, the valve responsive to electrical valve control signals to open and close, wherein the valve in an open state releases water from the water supply line into the water holding structure, and in a closed state prevents water from flowing from the water supply line into the water holding structure;

providing an electronic control system responsive to a user commands through a control panel to generate the valve control signals;

entering a user command through the control panel to actuate the valve;

opening the valve in response to the user command;

automatically closing the valve after a predetermined time has elapsed after opening the valve.

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27. (Twice Amended) A pool controller system for controlling operation of a pool service system including a water heater, a water filter, and for providing a semi-automated water fill capability, comprising:

[a] an electrically actuated valve connected to a water supply line, the valve responsive to electrical valve control signals to open and close, wherein the valve in an open state releases water from the water supply line into a water holding structure, and in a closed state prevents water from flowing from the water supply line into the water holding structure;

an electronic controller system responsive to manually entered user commands through a control panel to generate the valve control signals, the controller system for actuating the fill valve to the open state in response to a predetermined user fill command, and for automatically closing the valve upon elapsement of a predetermined fill time interval.

54. (Amended) In a spa or pool installation, including a water holding structure and a control system, a method for automatically releasing water into the water holding structure, comprising:

using an electronic pool control system, monitoring water parameters including water temperature and a water level sensor signal;

in response to a water level sensor signal indicative of a low water level in the water holding structure, generating electrical control signals to automatically [opening] open a water supply valve connected to a water supply line to release water into the water holding structure from a water supply line; and

generating electrical control signals to automatically [closing] close the water supply valve after a predetermined time interval has elapsed since opening the valve.

55. (Amended) In a spa or swimming pool installation, including a water holding structure, a method for releasing water into the water holding structure, comprising:

manually entering a water fill command through an electronic control panel connected to an electronic control system to actuate a water supply valve;

electrically opening the valve in response to the user command to release water into the water holding structure; and

automatically closing the valve in response to electrical signals from the electronic control signal after a predetermined time interval has elapsed after opening the valve.

63. (Amended) A pool or spa service system for providing a semi-automated water fill capability to replenish water in the pool or spa, comprising:

[a] an electrically actuated valve connected to a water supply line, the valve responsive to electrical valve control signals to open and close, wherein the valve in an open state releases water from the water supply line into the pool or spa, and in a closed state prevents water from flowing from the water supply line into the pool or spa;

an electronic controller system responsive to manually entered user commands through a control panel to generate the valve control signals, the controller system for actuating the fill valve to the open state in response to a predetermined user fill command, and for automatically closing the valve upon elapsement of a predetermined fill time interval.